What is claimed is: 分解後

1. An optical head apparatus, comprising:

a semiconductor laser light source;

a photodetector that receives at least one part of light from said semiconductor laser light source;

a light reflection element 107 provided with a peripheral section 203 that reflects peripheral light of the light from said semiconductor laser light source and condenses it into said photodetector and a central section 202 that transmits central light of the light from said semiconductor laser light source; and

a condenser lens that condenses the light that passes through said light reflection element onto an optical disc,

wherein:

each surface of the central section of said light reflection element has a flat shape; and

at least one surface of the peripheral section of said light reflection element has a spherical or non-spherical shape.

2. The optical head apparatus according to claim 1, wherein a condensing function of the peripheral section of said light reflection element has an astigmatic difference.

3. The optical head apparatus according to claim 1, characterized in that the condensing function of the peripheral section of said light reflection element has a spherical aberration.

4. The optical head apparatus according to claim 2, characterized in that the condensing function of the peripheral section of said light reflection element has a spherical aberration.

5. The optical head apparatus according to claim 1 wherein:

both surfaces of the central section of said light reflection element are parallel and inclined at a predetermined angle with respect to a direction perpendicular normal to an optical axis of the light from said semiconductor laser light source; and the astigmatism produced by the inclined placement of the central section of said light reflection element compensates the astigmatic difference of said semiconductor laser light source.

6. The optical head apparatus according to claim 2, wherein:

both surfaces of the central section of said light reflection element are parallel and inclined at a

predetermined angle with respect to a direction perpendicular to an optical axis of the light from said semiconductor laser light source; and the astigmatism produced by the inclined placement of the central section of said light reflection element compensates the astigmatic difference of said semiconductor laser light source.

7. The optical head apparatus according to claim 1, characterized in that one surface of the central section of said light reflection element is not parallel to the other surface.

8. The optical head apparatus according to claim 2, characterized in that one surface of the central section of said light reflection element is not parallel to the other surface.

9. The optical head apparatus according to claim 1, wherein the optical axis of the reflected light from the peripheral section of said light reflection element is inclined with respect to the optical axis of the light from said semiconductor laser light source.

10. The optical head apparatus according to claim 2, wherein the optical axis of the reflected light from the peripheral

section of said light reflection element is inclined with respect to the optical axis of the light from said semiconductor laser light source.

11. An optical head apparatus, comprising:

a semiconductor laser light source;

a photodetector that receives at least one part of light from said semiconductor laser light source;

a light reflection element provided with a function of reflecting peripheral light of the light from said semiconductor laser light source and condensing it into said photodetector and a function of transmitting the central light of the light from said semiconductor laser light source; and

a condenser lens that condenses the light that passes through said light reflection element onto an optical disc,

wherein said semiconductor laser light source and said photodetector are formed in one package.

12. An optical head apparatus, comprising:

a semiconductor laser light source;

a plurality of photodetectors placed adjacent to said semiconductor laser light source;

a reflection type hologram element provided with a peripheral section that reflects and diffracts peripheral light of the light from said semiconductor laser light source

and condenses it into one of said plurality of photodetectors and a central section that transmits central light of the light from said semiconductor laser light source; and

a condenser lens that condenses the light that passes through the central section of said reflection type hologram element onto an optical disc,

wherein:

said photodetector that receives said reflected and diffracted light is placed closer, with respect to said semiconductor laser light source, in the direction of the major axis of an ellipse than in the direction of the minor axis of the ellipse of an elliptic far field pattern of outgoing light from said semiconductor laser light source; and

the photodetector that receives signal light from said optical disc is placed closer, with respect to said semiconductor laser light source, in the direction of the minor axis of the ellipse than in the direction of the major axis of the ellipse of an elliptic far field pattern of outgoing light from said semiconductor laser light source.

13. The optical head apparatus according to claim 12, wherein said reflection type hologram element reflects and diffracts more light in the direction of the major axis of the ellipse than light in the direction of the minor axis of the ellipse

of the elliptic far field pattern of outgoing light from said semiconductor laser light source.

14. The optical head apparatus according to claim 12, wherein the hologram formation area of said reflection type hologram element is formed more widely in the direction of the major axis of the ellipse with respect to the center of the axis of the elliptic far field pattern of said semiconductor laser.

15. The optical head apparatus according to claim 13, wherein the hologram formation area of said reflection type hologram element is formed more widely in the direction of the major axis of the ellipse with respect to the center of the axis of the elliptic far field pattern of said semiconductor laser.

16. The optical head apparatus according to claim 12, wherein the condensing function of the peripheral section of said reflection type hologram element has an astigmatic difference.

17. The optical head apparatus according to claim 13, wherein the condensing function of the peripheral section of said reflection type hologram element has an astigmatic difference.

18. The optical head apparatus according to claim 12, wherein the condensing function of the peripheral section of said reflection type hologram element has a spherical aberration.

19. The optical head apparatus according to claim 13, wherein the condensing function of the peripheral section of said reflection type hologram element has a spherical aberration.

20. The optical head apparatus according to claim 12, wherein:

both surfaces of the central section of said reflection type hologram element are parallel;

these surfaces are inclined at a predetermined angle with respect to the direction perpendicular to the optical axis of the light from said semiconductor laser light source: and

the astigmatism produced by the inclined placement of the central section of said reflection type hologram element compensates the astigmatic difference of said semiconductor laser light source.

21. The optical head apparatus according to claim 13, wherein:

both surfaces of the central section of said reflection type hologram element are parallel;

these surfaces are inclined at a predetermined angle with respect to the direction perpendicular to the optical axis of the light from said semiconductor laser light source: and

the astigmatism produced by the inclined placement of the central section of said reflection type hologram element compensates the astigmatic difference of said semiconductor laser light source.

22. The optical head apparatus according to claim 12, wherein one plane of the central section of said reflection type hologram element is not parallel to the other plane.

23. The optical head apparatus according to any one of claim 13, wherein one plane of the central section of said reflection type hologram element is not parallel to the other plane.

24. The optical head apparatus according to claim 12, wherein the optical axis of reflected and diffracted light from the peripheral section of said reflection type hologram element is inclined with respect to the optical axis of light from said semiconductor laser light source.

25. The optical head apparatus according to claim 13, wherein the optical axis of reflected and diffracted light from the

peripheral section of said reflection type hologram element is inclined with respect to the optical axis of light from said semiconductor laser light source.

26. The optical head apparatus according to claim 12, wherein said semiconductor laser light source and a plurality of photodetectors provided adjacent thereto are formed in one package.

27. The optical head apparatus according to claim 12, further comprising a polarized hologram element that allows light from said laser light source to penetrate and the light reflected by said optical disc to diffract,

wherein:

said polarized hologram element is mounted on a movable part of an objective lens actuator together with an objective lens; and

the light transmission area of the central section of said reflection type hologram element has a quasi-elliptic shape whose major axis lies in the direction of the tracking operation of said objective lens actuator.

28. The optical head apparatus according to claim 12, further comprising a polarized hologram element that allows light

from said laser light source to penetrate and the light reflected by said optical disc to diffract,

wherein said polarized hologram element is integrated with said reflection type hologram element.

29. The optical head apparatus according to claim 12, wherein:

the light condensing point by said reflection type hologram element is apart from the plane of a photoreception element of said photodetector at a room temperature;

the light condensing point moves by wavelength fluctuations due to temperature variations: and

said light condensing point aligns with the plane of said photoreception element in the vicinity of a mid point of the operating temperature range of said optical head apparatus.

30. The optical head apparatus according to claim 12, wherein the hologram formation area of said reflection type hologram element is formed asymmetric with respect to a point centered on the optical axis of the light from said semiconductor laser light source.